

REMARKS**I. Claim Rejections – 35 U.S.C. § 102: Claims 1–8**

The Examiner rejected claims 1–8 under 35 U.S.C. § 102(b) as being anticipated by Cagan (5,159,761). This rejection is traversed.

A. Improper § 102 Rejection

In rejecting independent claim 1, the Examiner identifies Figures 2 & 3 of the Cagan patent as disclosing independent claim 1 of the present invention. This rejection of claim 1 and its dependent claims is traversed as being improper.

As stated in 35 U.S.C. § 102(b), a rejection may be proper when “the invention was patented or described in a printed publication.” Here, the invention of claim 1 is not described in the Cagan patent. Instead, the Examiner improperly refers to features from two separate devices in Cagan. Specifically, the sensors shown in Cagan’s Figure 2 and Figure 3 are two different sensors, which Cagan describes as “two, per-se known, types of sensors.” Cagan Figures 2 and 3 depict two different prior art (“known”) sensors. There is no teaching or suggestion in Cagan to combine his Figures 2 and 3. Cagan’s Figure 2 discloses a cross-sectional view of an electrolytic-type sensor that uses a fluid. Cagan’s Figure 3 discloses a different capacitive-type sensor that uses a pendulum. (See Cagan, column 3, lines 1 to 16.)

As previously amended, independent claim 1 recites:

A capacitive sensor comprising:
a body;
a pendulum suspended from the body;
at least one capacitor, wherein each capacitor has a first electrode on the body and a second electrode on the pendulum, whereby a variable capacitance between the first electrode and second electrode is indicative of a relative angular position between the body and the pendulum; and
a reference surface associated with the body and defining a reference plane having a desired orientation.

For the “reference surface” of claim 1, the Examiner identifies a fluid-air boundary in the Figure 2 device. For other features of claim 1, the Examiner identifies various element of the Figure 3 device. In sum, the Examiner combines selected features from two separate devices in an attempt to read on claim 1. The apparatus of claim 1 is not described in a single device in Cagan and thus this § 102 rejection is improper since the subject matter of claim 1 is not taught by the reference. Therefore, reconsideration and allowance of independent claim 1 and its dependent claims are respectfully requested.

B. No Motivation to Combine

Even assuming that Figure 2 shows a reference surface, there is no motivation to combine the fluid of Figure 2 with the pendulum device of Figure 3. It is understood that the variable capacitance of the Figure 2 device is formed by the relative position of the fluid (28) with respect to the electrodes pairs (22 & 26, or 24 & 26). It is also understood that the variable capacitance of the Figure 3 device is formed by the proximity of the conductive surface (44) of the pendulum (40) with the corresponding electrodes (34 or 36). The function of having a variable capacitance is performed by either one of the fluid (Figure 2) or the pendulum (Figure 3), therefore there is no need or motivation to have two elements (the fluid and the pendulum) to perform the same function.

C. No “Reference Surface”

Even assuming that the two different devices of Figures 2 and 3 could be combined (see next paragraph), Figure 2 does not show a “reference surface” as recited in claim 1. The Examiner suggests the air-fluid interface between Cagan’s electrolytic fluid (28) and air (30) discloses the reference surface of claim 1. It is not understood how a fluid contained in a casing (20) could be considered a reference surface as used in the present invention.

D. Unclear Basis for § 102 Rejection of claims 10–12 & 15

The Examiner introduces this § 102 rejection as rejecting claims 1–8, however, the Examiner also enumerates dependent claims 10, 11, 12, 13 and 15. As for claims 10, 11, 12 and 15,

it is unclear whether or not the Examiner intended to reject these claims because the Examiner has failed to articulate a basis for a rejection of same. For example, claim 10 recites “a spring” but the Examiner does not mention this claim feature in the rejection. Similarly, the Examiner does not mention the “relationship ... indicative of an angle” of claim 11, the “relative angular position” of claim 12, or the “four quadrants” of claim 15. Hence the rejection of those claims lack foundation.

Therefore, reconsideration and allowance of claims 1–8, 10–13 & 15 are respectfully requested.

II. Claim Rejections – 35 U.S.C. § 103: Claim 9

The Examiner rejected dependent claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Cagan (5,159,761) in view of Brihier (4,339,709). Since independent claim 1 has been shown to be allowable, this rejection of claim 9, which depends on claim 1, is moot. Reconsideration and allowance of claim 9 are respectfully requested.

III. Claim Rejections – 35 U.S.C. § 103: Claim 20

The Examiner rejected dependent claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Cagan (5,159,761) in view of Piske (6,313,912). Since independent claim 1 has been shown to be allowable, this rejection of claim 20, which depends on claim 1, is similarly moot. Reconsideration and allowance of claim 20 are respectfully requested.

IV. Claim Rejections – 35 U.S.C. § 102/103: Claims 21–25 & 27

The Examiner stated “[r]egarding claims 21–25, 27, the method is derived from the apparatus as claimed in claims 1–13, and are rejected as applied to claims 1–13. This rejection is traversed.

Claims 22–27 ultimately depend on independent claim 21. Independent claim 21 recites the act of “adjusting an orientation of the reference surface in response to the sensed variable capacitance.” The Examiner has at least failed to address this feature of independent claim 21 as being in the reference. Reconsideration and allowance of claims 21–27 are respectfully requested.

V. Allowable Subject Matter: claims 14 & 26

The Examiner indicated that claims 14 and 26 would be allowable if rewritten in independent form. In light of the allowability as explained above of independent claims 1 and 21, which claims 14 and 26 respectively and ultimately depend, claims 14 and 26 are also allowable in their current dependent form.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Reconsideration and allowance of pending claims 1-15 & 20-27 are respectfully requested. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited and encouraged to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 549242002300. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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